

What is claimed is :

1. A flame-resistant polymer being denatured with an amine compound.
2. The flame-resistant polymer according to Claim 1, wherein a precursor of the flame-resistant polymer is an acrylonitrile polymer.
3. A flame-resistant polymer-containing solution containing a flame-resistant polymer and a polar organic solvent.
4. The flame-resistant polymer-containing solution according to Claim 3, wherein the polar organic solvent is an amine organic solvent.
5. The flame-resistant polymer-containing solution according to Claim 3, wherein the amine organic solvent is an amine compound having two or more functional groups.
6. The flame-resistant polymer-containing solution according to any one of Claims 3 and 5, wherein the flame-resistant polymer is denatured with the amine compound.
7. The flame-resistant polymer-containing solution according to any one of Claims 3 and 6, wherein said flame-resistant polymer is obtained by using an acrylonitrile polymer as a precursor.
8. The flame-resistant polymer-containing solution according to any one of Claims 3 and 7, wherein a concentration of the flame-resistant polymer calculated by the following expression is 2 to 70% by weight;
$$[\text{flame-resistant polymer concentration (\% by weight)}] = 100 \times \frac{[\text{flame-resistant polymer weight (g)}]}{[\text{flame-resistant polymer-containing solution weight (g)}]}$$

where flame-resistant polymer weight indicates weight of solid component remaining in heating the flame-resistant polymer-containing solution in nitrogen at a rate of 50°C /minute up to 300°C.

9. A method for manufacturing a flame-resistant polymer-containing solution containing a flame-resistant polymer and a polar organic solvent, characterized by making a precursor of the flame-resistant polymer flame-resistant in an amine organic solvent or the polar organic solvent containing an amine compound.
10. A method for manufacturing a flame-resistant polymer-containing solution containing a flame-resistant polymer and a polar organic solvent, characterized by dissolving the flame-resistant polymer in an amine organic solvent or the polar organic solvent containing an amine compound.
11. A flame-resistant formed product comprising a part or the whole thereof composed of a flame-resistant polymer denatured with an amine compound.
12. The flame-resistant formed product according to Claim 11, being fibrous.
13. The flame-resistant formed product according to Claim 11, being sheet and having a thickness of 5 mm or less.
14. A carbon molded product comprising a part or the whole thereof composed of a carbon component obtained by carbonizing a flame-resistant polymer denatured with an amine compound.
15. The carbon molded product according to Claim 14, being fibrous.
16. The carbon molded product according to Claim 14, being sheet and having a thickness of 5 mm or less.

17. The carbon molded product according to any one of Claims 14 to 16, wherein a crystal size L_c (Å) measured by wide-angle X-rays is 30 or less, and L_c and a nitrogen content N (% by weight) satisfy $[N \geq 0.04(L_c - 30)^{2+0.5}]$.
18. A method for manufacturing a flame-resistant formed product comprising the steps of:
forming the flame-resistant polymer-containing solution according to any one of Claims 3 to 8; and removing a solvent after said step.
19. The method for manufacturing a flame-resistant formed product according to Claim 18, wherein said step of forming is the step of forming into being sheet.
20. The method for manufacturing a flame-resistant formed product according to Claim 18, wherein said step of forming is the step of forming into being fibrous.
21. A method for manufacturing a carbon molded product, characterized by carbonizing the flame-resistant formed product according to any one of Claims 11 to 13.
22. A method for manufacturing a carbon molded product, characterized by carbonizing a flame-resistant formed product obtained by the method according to any one of Claims 18 to 20.